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EchoPAC PC Software Only

version 7.x.x



Installation Manual

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Operating Documentation

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GE Medical Systems

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Introduction

EchoPAC PC Software Only installation manual

This manual describes how to install EchoPAC PC Software Only on a Personal Computer.

EchoPAC PC Software Only is intended to be installed on a Personal Computer fulfilling the minimum requirements as specified in this manual (see page 6).



CAUTION

Read this manual before attempting to install EchoPAC PC Software Only.

After installation EchoPAC PC Software Only must be validated following the procedure described in this manual (see page 25).

Important

The EchoPAC PC product range consists of:

- EchoPAC PC Software Only: the current product.
- EchoPAC PC Workstation (turnkey, hardware and software)



CAUTION

Do NOT attempt to install the EchoPAC PC Software Only on an EchoPAC PC Workstation.

Do NOT attempt to install the software from EchoPAC PC Workstation on a Personal Computer.

Product description

EchoPAC PC Software Only is a post processing program designed for ultrasound image review, analysis and reporting. EchoPAC PC Software Only allows post-processing of raw data images from GE ultrasound scanners and DICOM ultrasound images.

The main functionality of EchoPAC PC Software Only is:

- Read/display DICOM ultrasound and GE raw data images.
- Ultrasound image optimization, as on a scanner.
- Measurement and analysis
- Advanced quantitative analysis, based on raw data such as quantitative TVI, contrast and stress analysis.
- Image storage
- Patient record database
- Report generator

Refer to the EchoPAC PC User's Manual for information on how to use the software.

The EchoPAC PC Software Only and The EchoPAC PC Workstation have the same clinical functionality, except for the following features that are not available in EchoPAC PC Software Only:

- No writing directly to CD/DVD (Must be done by other software packages).
- The TCPIP settings cannot be configured within the application (it must be done in Windows).
- InSite/iLink is not available.
- Removable media cannot be formatted within the application.
- Removable media cannot be ejected from within the application.
- The printer setup cannot be done from within the application.
- The Computer name cannot be set from within the application.

Other differences:

- With EchoPAC PC Software Only the user has access to Windows desktop and other Windows applications.
- EchoPAC PC Software Only uses the Windows color scheme for windows, menus...etc.
- With EchoPAC PC Software Only any Windows compatible printers may be used (but on customer's responsibility).

Safety



CAUTION

The computer running EchoPAC PC Software Only must not be placed inside the patient environment (refer to local regulations and EN 60601-1-1).

1. Patient environment

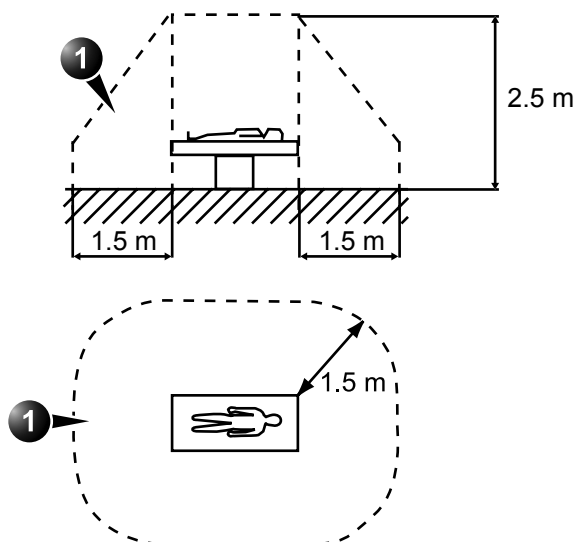


Figure 1-1: The patient environment



CAUTION

To ensure patient safety, any combination of hardware used for EchoPAC PC Software Only and other Medical Devices, must comply with IEC60601-1-1:2000 - Safety requirements for medical electrical systems

Chapter 1

Software installation

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EchoPAC PC Software Only **content**

EchoPAC PC Software Only consists of the following items:

- EchoPAC PC Software Only Installation CD
- Software Dongle
- Installation manual
- EchoPAC PC user manual (paper or CD)

Computer requirements



WARNING

To ensure patient safety, any combination of hardware used for EchoPAC PC Software Only and other Medical Devices, must comply with IEC60601-1-1:2000 - Safety requirements for medical electrical systems.

The minimum requirements for the computer are listed in the table below.

Item	Minimum requirements	
	Without 4D option	With 4D option
OS	Windows 2000 Windows XP Professional	Windows 2000 Windows XP Professional
CPU	Pentium III, 1 GHz	Pentium 4 (2.4 GHz) or Pentium M (1.6 GHz)
RAM	512 Mb	1 Gb, DDR-2, 533 MHz
Disk space	700 Mb on C for the program files and 3 Gb for the archive	700 Mb on C for the program files and 3 Gb for the archive
Graphic	Min. resolution: 1024x768 Max. resolution: 1920x1200 32-bits colors 16 Mb	Min. resolution: 1024x768 Max. resolution: 1920x1200 High performance graphic cards such as Nvidia: GeForce 7800 (minimum), 7900, 8600 series or better. ATI: X1900 (minimum), 2900, GL7200 or better. 32-bits colors
USB	At least one port available	At least one port available

Item	Minimum requirements	
	Without 4D option	With 4D option
Installed SW	Windows Media Player 9.0 or higher Adobe Acrobat Reader 4.0 or higher (for On line Help function)	Windows Media Player 9.0 or higher Adobe Acrobat Reader 4.0 or higher (for On line Help function)



CAUTION

EchoPAC PC Software Only cannot be installed on a computer that already has Sybase or Oracle installed.

Software installation



CAUTION

To be able to install EchoPAC PC Software Only the current Windows user account must have Administrator rights.

Do not insert the hardware key (dongle) before the EchoPAC PC Software Only is installed (see also 'Starting EchoPAC PC Software Only' on page 19).

Preliminary recommendations

If you are upgrading EchoPAC PC Software Only, please keep the original installation CD handy; the new installer may ask for it.

If you are installing EchoPAC PC Software Only on a domain (please contact your network administrator if you are unsure of the meaning of this):

1. Start up the PC without logging on to the domain, i.e. as a local user only.
2. Install EchoPAC PC Software Only.
3. Start up the PC again and log on to the domain.

Prior to installing EchoPAC PC Software Only, we recommend that you disable the following:

- Simple File Sharing (found in Windows XP Service Pack 2)
- All firewalls
- Guest user

Inserting the CD

1. Insert the EchoPAC PC Software Only CD into the computer's CD-ROM drive.
The installation software starts automatically and a *Welcome screen* is displayed (Figure 1-1).



Figure 1-1: Preparing the Install Shield Wizard

If the CD does not start automatically, press **Start**, select **Run** and enter **X:\setup.exe** (where X is the CD drive letter) in the *Run window*. Press **Next**.

Licence agreement and Read me file

A message window is displayed referring to this manual for translated information.



Figure 1-2: Refer to the Installation manual

1. Press **Next**.

The *Read Me text* is displayed (Figure 1-3).

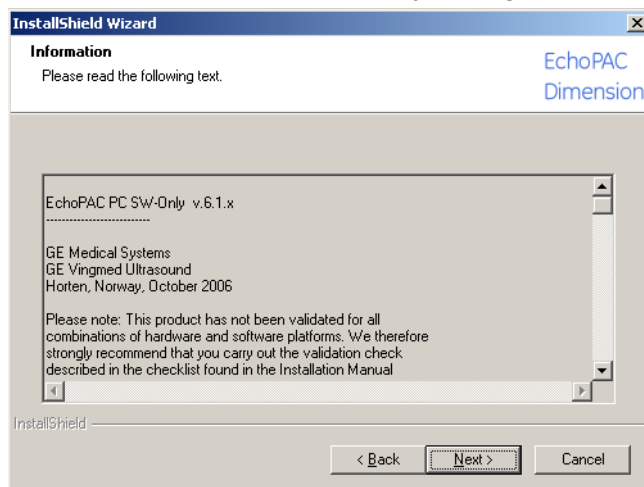


Figure 1-3: The Information window

2. Read the information and press **Next**.

Preparing the archive installation

The *Archive location message* is displayed (Figure 1-4).

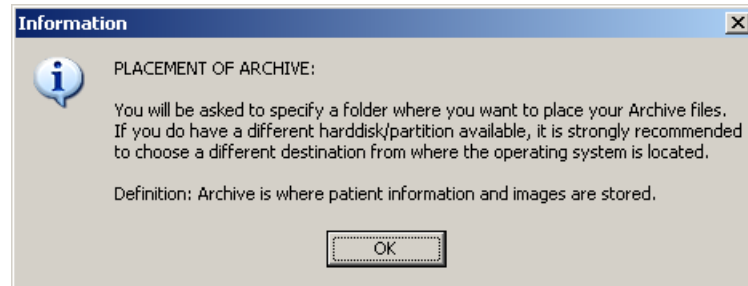


Figure 1-4: The Archive location message

1. Read the information and press **OK**.
 - If this is the first installation of EchoPAC PC Software Only on the computer, read and follow 'First time installation' on page 11.
 - If you are re-installing EchoPAC PC Software Only on the computer, jump to 'Upgrade/Re-installation' on page 11.

First time installation

1. The Archive location setup window is displayed (Figure 1-7).
Jump to 'Defining the archive location' on page 13.

Upgrade/Re-installation

If an archive already exists on the computer from a previous installation, the following message is displayed.

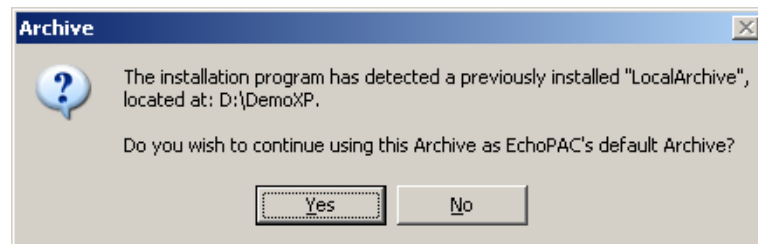


Figure 1-5: The Existing archive message

1. Select:
 - **Yes** to use the existing archive as default archive. The *System information window* is displayed (Figure 1-9).
 - **No** to create a new archive. The *Delete archive*

message is displayed.

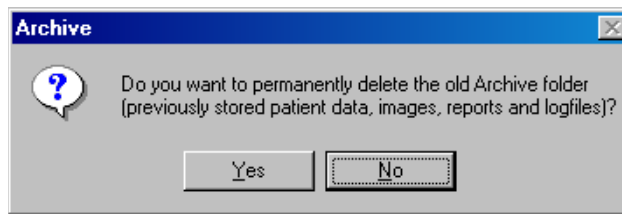


Figure 1-6: The Delete archive message

- Select **Yes** to delete the existing archive at the end of the installation process. (A new window will be displayed asking for confirmation, Figure 1-15.) The *Archive location setup window* is displayed (Figure 1-7).
- Select **No** to keep the archive on the disk. It will not be used by EchoPAC PC. The *Archive location setup window* is displayed (Figure 1-7).

Defining the archive location

The *Archive location setup window* is displayed.

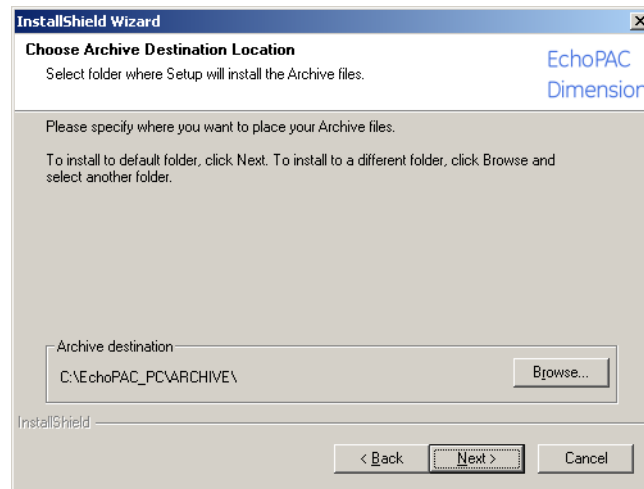


Figure 1-7: The Archive location setup window

Default archive location

1. Press **Next** in the *Archive location setup window*.
The *System information window* is displayed (Figure 1-9).

User-defined archive location

1. Press **Browse** in the *Archive location setup window*.
The *Chooser folder window* is displayed (Figure 1-8).

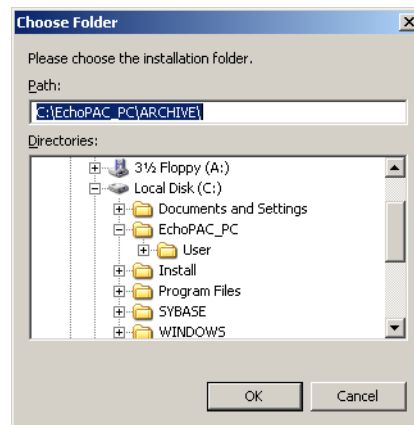


Figure 1-8: The Chooser folder window

2. Select the desired location for the archive.

The archive cannot be installed directly on a partition root, it must be within a folder.

If an archive already exists on the computer, the new archive cannot be installed in the same folder as the previously installed archive.

3. Press **OK**.

The *System information window* is displayed (Figure 1-9).

System check

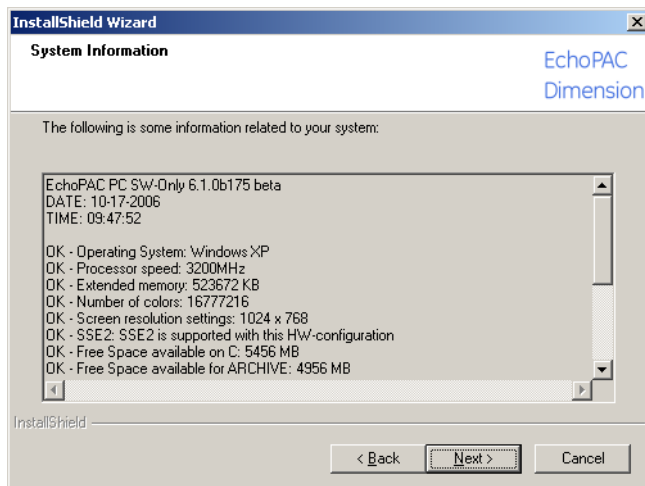


Figure 1-9: The System information window

1. Press **Next** or if some of the items displayed in the System information window are not fulfilling the system requirements/recommendations (see page 6) the following warning is displayed.

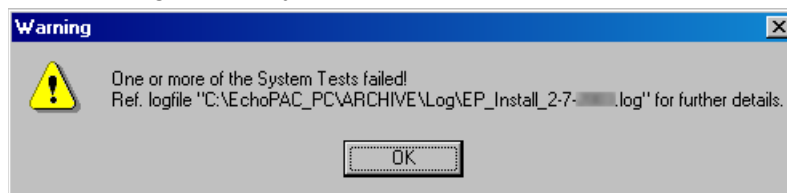


Figure 1-10: Warning, incompatibility

Press **OK**.

Copying files

The *Start copying files window* is displayed (Figure 1-11).

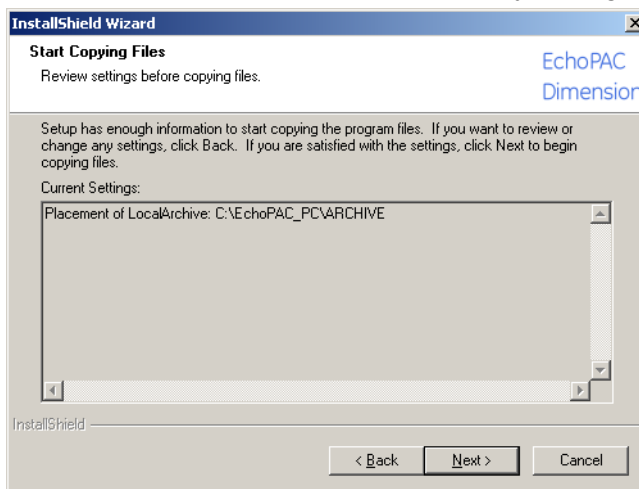


Figure 1-11: The Start copying files window

1. Press **Next**.

The EchoPAC PC and database files are copied on the computer.

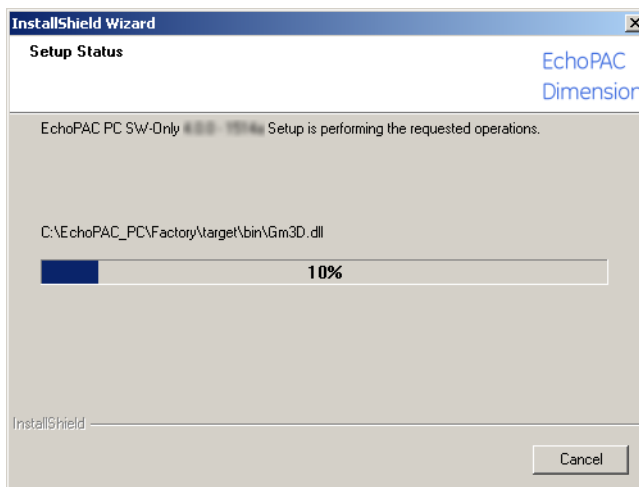


Figure 1-12: The Copy files window (EchoPAC PC files)

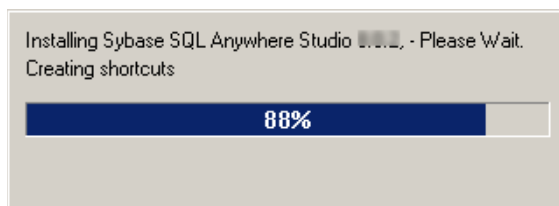


Figure 1-13: The Copy files window (Database files)

Resuming the installation

Once the files are copied, the EchoPAC PC installation is resumed.

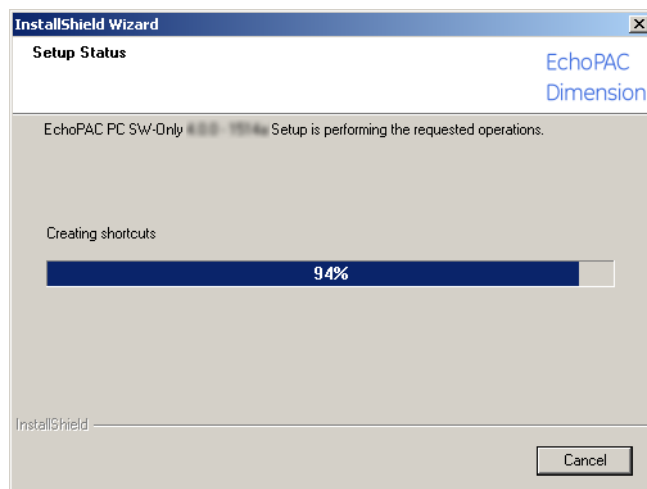


Figure 1-14: Command processing windows

If the software is being re-installed and you decided to delete the existing archive (see page 11), a confirmation window is displayed.

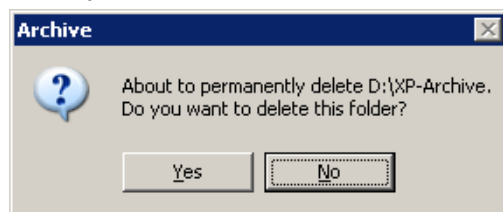


Figure 1-15: The Delete archive window

1. Select either:
 - **Yes** to permanently delete the archive from the previous installation.

OR

- **No** to keep the archive on the disk.
The *Insert Dongle* window is displayed.



Figure 1-16: The Insert Dongle window

2. Insert the dongle in one of the USB port and select **OK**.
The *Install Shield Wizard complete* window is displayed (Figure 1-17).

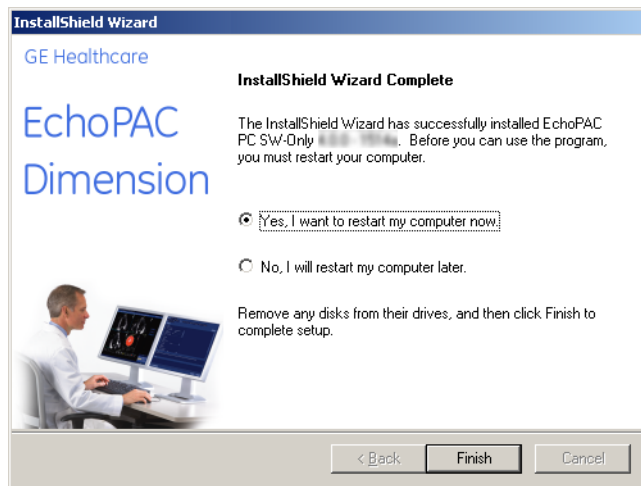


Figure 1-17: The Install Shield Wizard complete window

3. Select **Yes** and press **Finish**.

Direct connection of a scanner to EchoPAC PC

The PC running EchoPAC PC Software Only can be connected to a scanner (Vivid 3, Vivid 4, Vivid 7 or Vivid i). In this configuration, patient and image data is transferred from the scanner to EchoPAC PC.

Physical Connection

The PC must be equipped with a network card with at least 10 Mbps data transfer rate.

There are two ways to connect the scanner to EchoPAC PC.

- connect both units using a crossover ethernet cable (ethernet cable with send and receive wires crossed).
- connect both units to a switch (hub), using regular straight through ethernet cables.

Note: Only one scanner can be connected at a time.

TCP/IP setting

Refer to the scanner's user manual to configure the scanner to a direct connect environment.

The PC running EchoPAC PC Software Only must have correct subnet mask setting, contact your network administrator.

Firewall

When in direct connect with a scanner, any firewall software running on the PC must be stopped.

Starting EchoPAC PC Software Only



CAUTION

EchoPAC PC Software Only requires that the hardware key (dongle) is inserted in an USB port.

When inserting the dongle for the first time the current Windows user account must have Administrator rights.

The detection of the dongle by the computer is USB port dependent. It is therefore recommended to insert the dongle into every available USB port while logged on with Administrator rights.

EchoPAC PC Software Only can be started from the *Windows Start menu* (Figure 1-18) or from the shortcut created on the computer's Desktop.

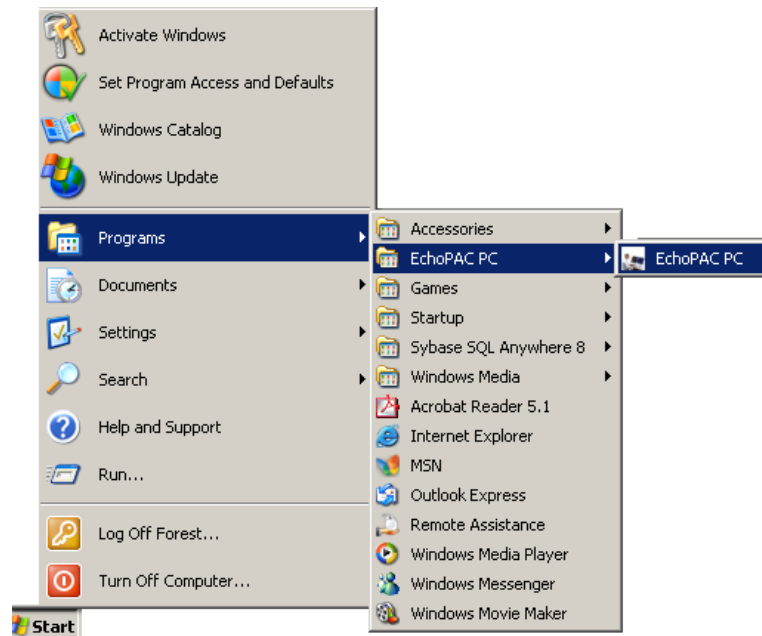


Figure 1-18: The Windows Start menu

Run the validation procedure as described in Chapter 2, 'Software validation' on page 25.

Refer to the EchoPAC PC User's Manual for information on how to use the software.

Accessing user documentation

On line Help

1. Press **Help** in the Menu bar.

Electronic documentation

If the EchoPAC PC User Manual is provided on a CD, follow the following procedure:

1. Insert the CD in the CD Drive.
2. Open the CD drive on your desktop.
3. Double click on the **gedocumentation.html** document.
4. In the Documentation interface home page select the EchoPAC PC user manual.

*Adobe Acrobat
Reader must be in-
stalled.*

*Adobe Acrobat
Reader must be in-
stalled.*

Removing EchoPAC PC Software Only

The following programs were installed during EchoPAC PC Software Only installation:

- EchoPAC PC Software Only
- Sybase SQL Anywhere
- Windows Media 8 Encoding Utilities

The programs may be removed separately using the Windows *Add/Remove Programs* application. EchoPAC PC Software Only should be removed first. The procedure being similar for all programs, only the removal of EchoPAC PC Software Only will be described.

Removing EchoPAC PC Software Only

1. Press **Start** in the *Windows tool bar*.
2. Select **Settings** and **Control Panel**.
3. In the *Control Panel window*, select **Add/Remove Programs**.
The Add/Remove Programs window is displayed (see Figure 1-19).
4. Make sure that the **Change or Remove Programs** option is selected in the left pane.
5. Select **EchoPAC PC SW-Only**.
The selection is expanded.

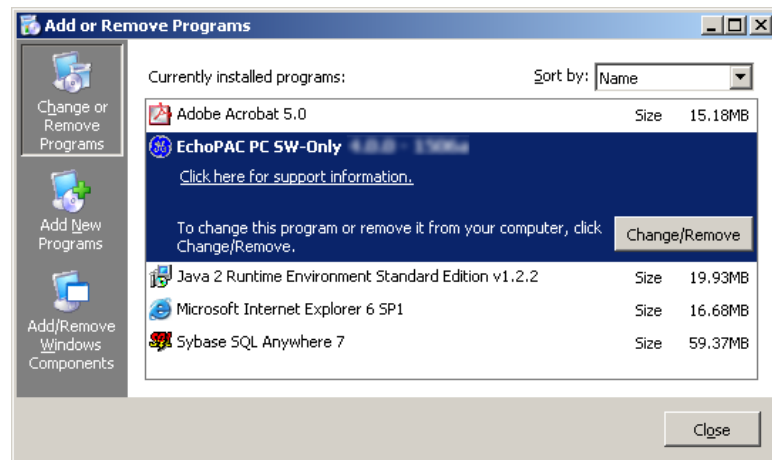


Figure 1-19: The Add/Remove Programs window

6. Press **Change/Remove**.
The *Install Shield programs wizard welcome window* is displayed.

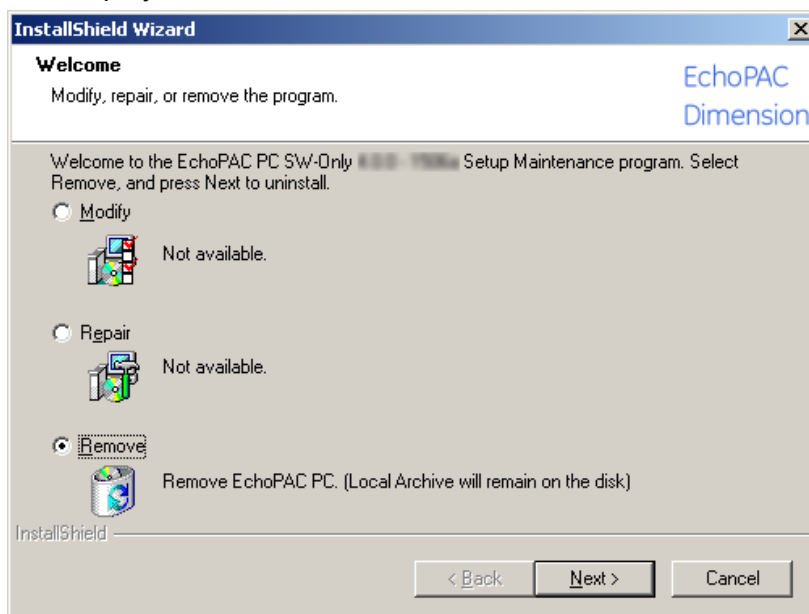


Figure 1-20: The Install Shield programs wizard welcome window

7. Make sure that **Remove** is checked.
8. Press **Next**.
A *Confirmation window* is displayed.

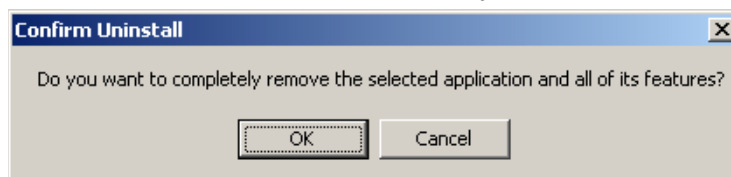


Figure 1-21: The Confirmation window

9. Press **OK**.
EchoPAC PC Software Only is being removed.

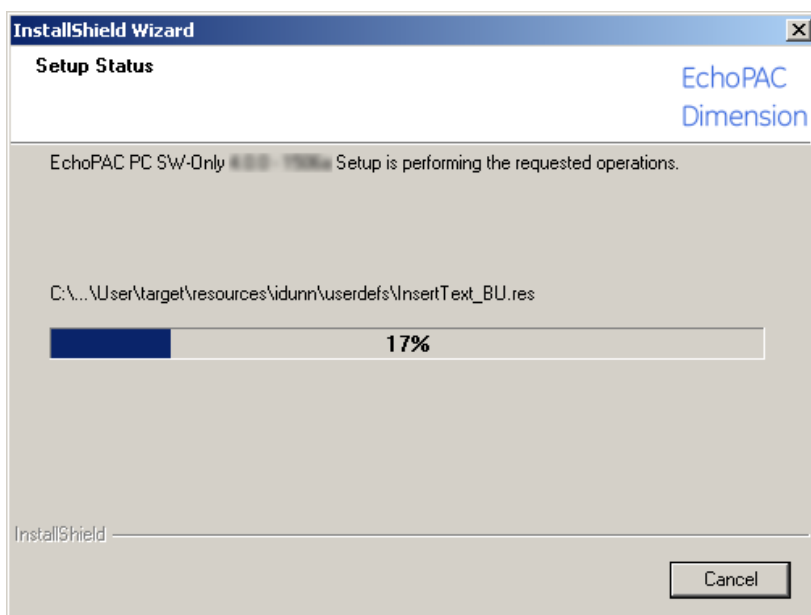


Figure 1-22: Removing EchopAC PC Software Only

An Information window explaining how to remove Sybase SQL Anywhere and Java 2 Runtime Environment Standard Edition is displayed.

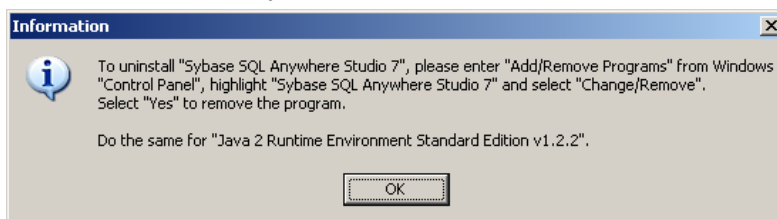


Figure 1-23: The Information window

10. Press **OK**.
The removing procedure for EchoPAC PC Software Only is resuming.

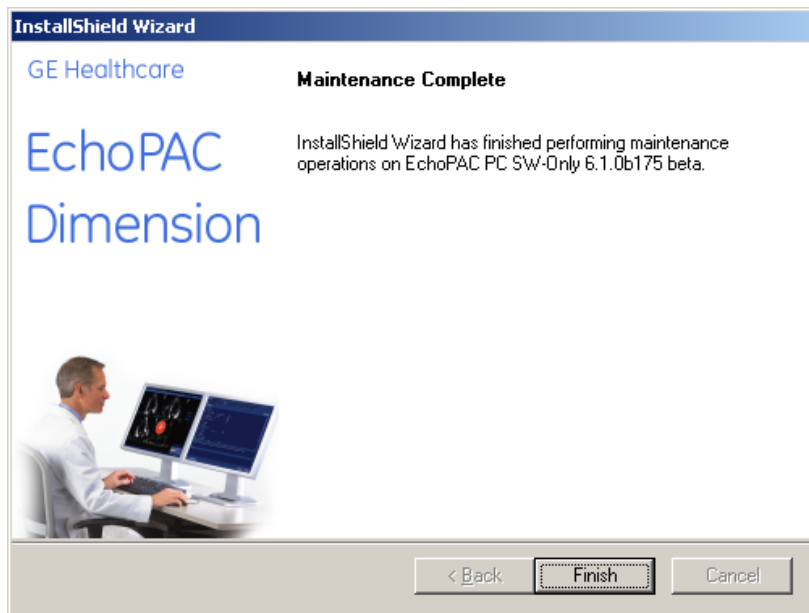


Figure 1-24: Removing EchopAC PC Software Only

11. Press **Finish** to complete the operation.
12. Remove Sybase SQL Anywhere and Java 2 Runtime Environment Standard Edition using the same procedure.

Chapter 2

Software validation

Introduction

This chapter describes a step-by-step procedure for validating proper installation and operation of EchoPAC PC Software Only.

It is strongly recommended to perform this validation procedure each time EchoPAC PC Software Only is installed on a PC. The validation procedure should also be performed on existing installations if hardware or software environment has changed since the installation (e. g. graphic board replacement or operative system upgrade).

Please fill out and sign the validation form on page 30 and return it to your local GE sales representative if required.

The purpose of this procedure is:

- To validate that the product EchoPAC PC Software Only functionality and performance is meeting your expectations on your specific PC hardware and software environment.
- To make sure that the software does not give erroneous or misleading diagnostic results when running on your computer.

Regarding the validation steps 2. to 6. below, if you are uncertain about the details on how to carry out these operations, please refer to the User Manual for EchoPAC PC.

Validation Steps 1 to 6: close all other Windows applications, so that EchoPAC PC is the only application running.

Validation Procedure

Perform the validation steps below and fill in the result in the table on page 31.

Validation Step 1 - Software installation

- Install EchoPAC PC Software Only on your PC following this manual and the on-screen instructions.

Did you successfully install the EchoPAC PC software?

Validation Step 2 - Start EchoPAC PC

- Double-click on the EchoPAC PC icon on the desktop.
Select the Operator **ADM** and no password to log on to the archive.

Did you successfully start EchoPAC PC and log on?

Validation Step 3 - Import sample archive from CD

- Insert the Installation CD.
*Note: when inserting the CD, the installer program will start automatically (unless auto-run from CD is disabled on your PC). Press **Cancel** to exit the Installation wizard.*
- Press **Import** in the *Search/Create patient window*.
Select **Removable CD Archive** from the *Source drop-down menu* in the *Import Dialogue window* and import all the records from the sample archive on the CD.
- In the *Search/Create patient window* select the dataflow **Local Archive - Int. HD** and search the imported records.
Did you successfully import the records from the sample archive?

Validation Step 4 - Image quality

- Select the patient **Example, Images**.
- Press **Image Browser**.
- Open the images one by one by double-clicking the thumbnails.
- Compare each image on screen with the corresponding

printed image (see page 33).

Note: to get optimal display you may have to adjust the monitor settings (brightness, contrast, color temperature...etc).

Based on your qualitative judgement, do the ultrasound images displayed on screen have correct greyscale, colors and have sufficient diagnostic quality?

Validation Step 5 - Measurement accuracy

- Select the patient **Phantom, Images**.
- Press **Image Browser**.
- Open the first image by double-clicking the first thumbnail.
- Press **Caliper** on the Control panel.
- Make a vertical measurement from one point to another.
The distance between each vertical point is two cm.
Make sure that the measured distance is correct within 10% accuracy.
- Make a horizontal measurement from one point to another.
The distance between each horizontal point is three cm.
Make sure that the measured distance is correct within 10% accuracy.
- Press **Image Browser** and open the third image by double-clicking the third thumbnail.
- Press **Caliper** on the Control panel and measure the diameter on one of the circles in the image.
The diameter is one cm.
Make sure that the measured distance is correct within 10% accuracy.

Validation Step 6 - Image review performance

- Select the patient **Example, Images**.
- Press **Image Browser**.
- Select all the images and press **Analyze**.
Verify that the image loading time and cineloop display is adequate/acceptable.

- Double-click one of the running cineloops to have it displayed in full-screen.
Verify that the cineloop is running smoothly and with acceptable speed.

Validation Step 7 - Effect on previously installed software

- Run the other applications that you had installed from before (before you installed EchoPAC PC Software Only).
Make sure these programs still function and perform as expected. I.e. check that installing EchoPAC PC Software Only did not have any negative effect on the other software packages, or on Windows in general.

Validation Step 8 - Network contact (Optional)

This step is optional and relevant only if EchoPAC PC Software Only is to be operated in a network environment.

- Make sure that the PC is connected to the network and that you have regular network connection in Windows Explorer.
- Configure EchoPAC PC Software Only to connect to the server:
 - Go to Config -> Connectivity -> TCP/IP.
 - Enter the Server IP-address and name in the *Remote archive setup field*. (Refer to the network specifications.)
- Restart the EchoPAC PC Software Only application.
- In the *Search/Create patient window* select the dataflow **Remote Archive - Remote HD**.
Make sure the patient list from the server is displayed in the *Search/Create patient window*.

Validation Step 9 - Direct connect with a scanner (Optional)

This step is optional and relevant only if an ultrasound scanner (Vivid 7, Vivid 3, Vivid 4 or Vivid i) is directly connected to EchoPAC PC Software Only.

- Configure the PC and connect the units as described in page 18.

- Configure the scanner for connection to a remote archive and select the “Remote Archive” dataflow as default dataflow. See Vivid 7 User Manual, chapter 8, section Connectivity and Vivid 3 Service manual, chapter 3, section Connectivity Setup.
- Perform a dummy examination on the scanner. Make sure to properly terminate the examination.
- **Check if the examination can be opened from EchoPAC PC and make sure you are able to review the exam data, patient demographics, measurements and images.**

Validation Step 10 - Backup on MO drive (Optional)

This step is optional and relevant only if you have a MO drive connected to the PC and you are going to use a MOD for backup of data using the Backup/Restore functionality that is part of EchoPAC PC Software Only.

- Make sure that the MO drive is properly connected and mounted in Windows.
Ensure that you can read and write to the MOD from Windows Explorer.
- Perform a backup of the patient records in the local archive, following the Backup procedure described in the EchoPAC PC User Manual.
- Delete the patients records from the local archive.
- Restore the patient records to the local archive, following the Restore procedure described in the EchoPAC PC User Manual.
- **Make sure that the patient records are properly restored from the backup MOD to the local archive.**

Validation Step 11 - Backup using a third-party backup tool (Optional)

- Follow the instructions provided in the EchoPAC PC User manual to perform a backup using a third-party backup tool (See chapter 2, section Data Backup and Restore).
- **Verify that you are able to backup and restore patient data and user-defined settings.**

Validation form

Customer and PC hardware information

Please fill in as much information as you have available. As a help to find the PC specific information (item 9. to 17. in the table below), you can look inside the file “EP_Install_<date>.log”, which is located in the folder named “Log” inside the folder you specified as archive destination during installation. In fact, we recommend, if possible, that you print out that file and attach it to the validation form.		
1	Name	
2	Institution	
3	ZIP/City	
4	Country	
5	E-Mail address	
6	EchoPAC PC sw version	
7	Dongle-ID (see USB hardware key)	
8	Type of PC (Laptop, Desktop, Tablet...etc)	
9	PC make and model (Be as specific as possible)	
10	Operative System	
11	Boot drive	
12	Processor speed	
13	Memory (RAM)	
14	Number of colors	
15	Screen resolution	
16	Free space on C:	
17	Free space for ARCHIVE	
18	CD-ROM drive	
19	OS language	

Validation procedure summary

Step	Description	Passed	Failed
1	Software installation	☐	☐
2	Start EchoPAC PC	☐	☐
3	Import sample archive from CD	☐	☐
4	Image quality	☐	☐
5	Measurement accuracy	☐	☐
6	Image review performance	☐	☐
7	Effect on previously installed softwares	☐	☐
8	Network contact (Optional)	☐	☐
9	Direct connect with a scanner (optional)	☐	☐
10	Backup on MO drive (optional)	☐	☐
11	Backup using third-party backup tool (optional)	☐	☐

Successful installation

I hereby declare to have performed a successful validation of EchoPAC PC Software Only. I accept the End User License Agreement and I find the general performance, reliability and feature set of EchoPAC PC acceptable.

Date:

Name (print):

Signature:

Trouble-shooting

Problem reading CD/DVD

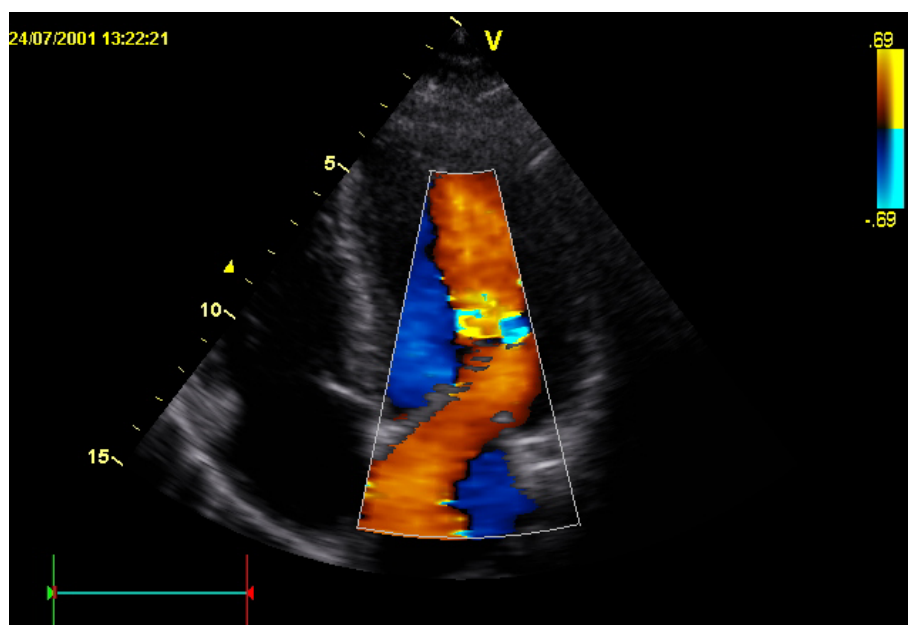
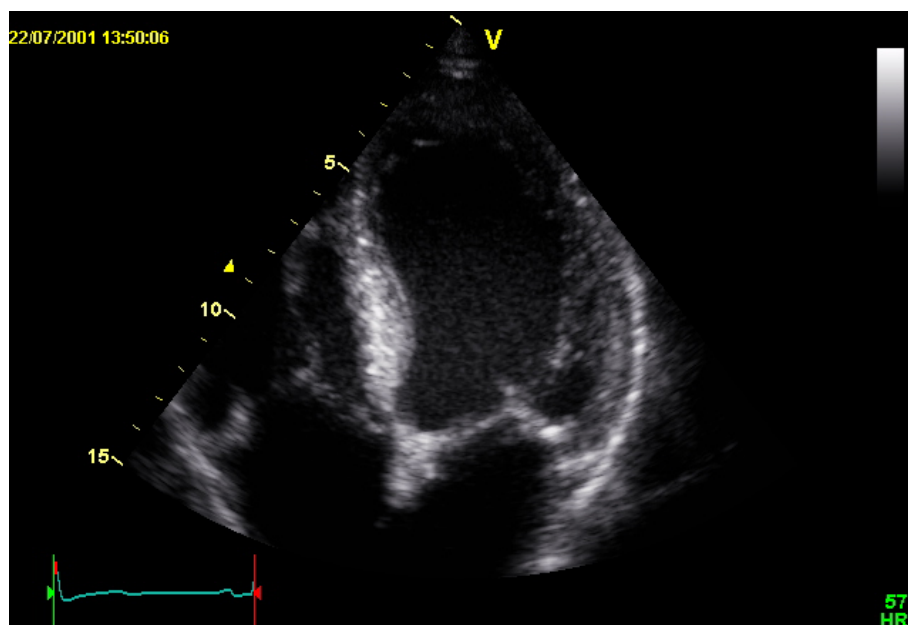
The following solution may apply if you get an error message when reading CD/DVD: "No media in drive. Cannot format using EchoPAC PC Software Only".

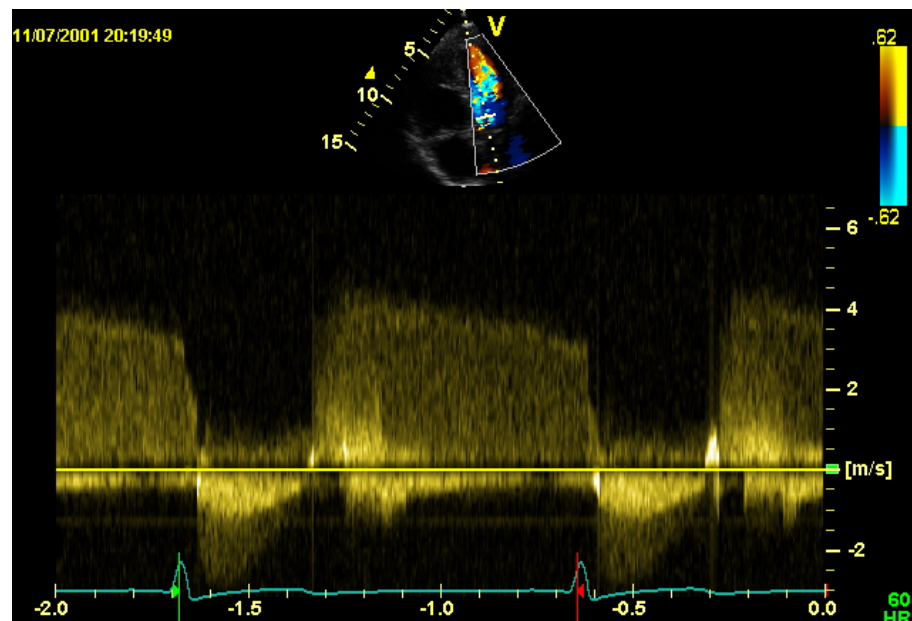
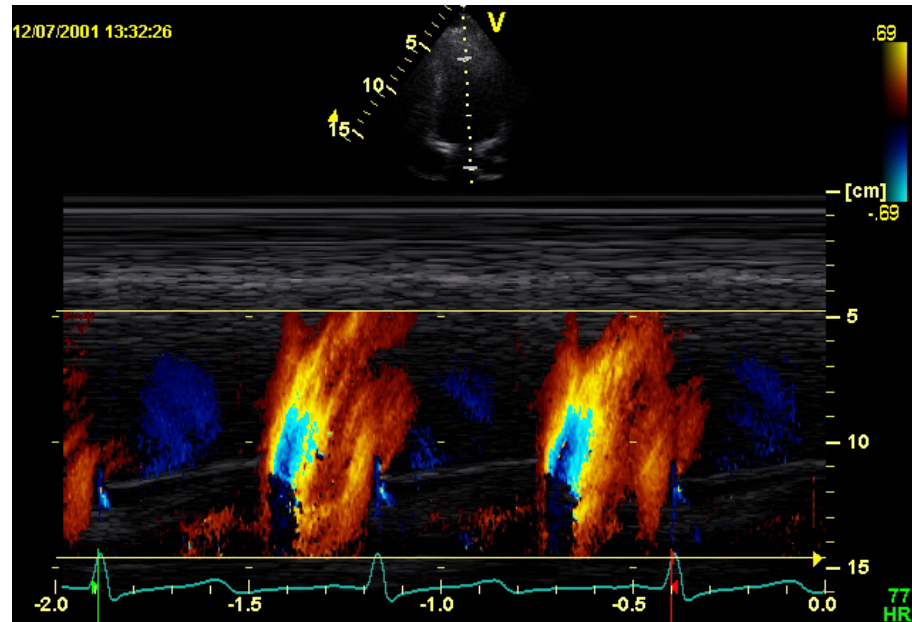
Disabling of DLA from Sonic

1. Double click **My Computer** (Windows Desktop).
2. Right click the CD/DVD device and select **Properties**.
3. Select **DLA** tab (if there is no such tab, you probably don't have Sonic installed and this note does not apply to your system).
4. Uncheck **Enable DLA on your drives**.
5. Select **Apply** and **OK**.

Image samples

The images at the end of the book are used for Image quality validation of EchoPAC PC Software Only installed on your PC.







GE Medical Systems
